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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
DOUGLAS G PLACEK, ET AL.	: EXAMINER: KHAN, AMINA S.
SERIAL NO: 10/626,645	:
FILED: JULY 25, 2003	: GROUP ART UNIT: 1796
FOR: A FUNCTIONAL FLUID AND THE USE THEREOF	:

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Responsive to the Final Office Action of May 5, 2008, Appellants request review of the rejections of the present claims by the Board of Patent Appeals and Interferences.

I. REAL PARTY IN INTEREST

The real party in interest is Rohmax Additives GmbH of Darmstadt, Germany.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1-2, 12, 16-25, 27-29, 33, 35-37, 39 and 43-45 are pending and rejected in the present application. The rejection of Claims 1-2, 12, 16-25, 27-29, 33, 35-37, 39 and 43-45 is appealed. Claims 3-11, 13-15, 26, 30-32, 34, 38, 40-42 and 46-58 are canceled claims.

IV. STATUS OF THE AMENDMENTS

The amendment filed on December 10, 2007 was entered and considered. The arguments filed on April 3, 2008 were entered and considered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1 is drawn to a functional fluid. Functional fluids are described on page 1, lines 1-10 of the specification. The functional fluid includes components (A) and (B). Component (A) is an alkyl(meth)acrylate polymer that contains 15-70 wt.% of polymerized units of formula (I) recited in the claim. In addition, the alkyl(meth)acrylate polymer of component (A) includes polymerized units of a monomer of formula (II) recited in Claim 1 in an amount of 30-85 wt%. Component (A) is described in the specification on page 3, lines 6 to the bottom of the page. The polymerized monomer units of formula (I) and (II) are described on pages 5, third full paragraph-page 7, through the first full paragraph. Component (B) is present in an amount of 70-95 wt.%. Component (B) is an oxygen containing compound selected from the Markush group recited in Claim 1. Component (B) is described on page 13, last paragraph through page 17, first full paragraph. Functional fluid of Claim 1 must have a certain Factory Mutual 6390 fire rating. The Factory Mutual fire rating is disclosed on page 18, second and third full paragraphs.

Dependent Claim 23 recites a kinematic viscosity. Kinematic viscosity is described in the last paragraph on page 18.

Dependent Claim 24 recites a pour point. Pour points are described in the third full paragraph on page 19.

VI. GROUNDS OF REJECTION

A. Claims 1-2, 12, 16-18, 20, 23-25, 27-28, 33, 35-37, 39 and 43-45 are rejected as obvious under the meaning 35 U.S.C. § 103(a) over the combination of Roos (U.S. Patent No. 6,403,746) and Kinker (U.S. Patent No. 5,696,066).

The Office cites Roos for disclosure of polymer compositions in lubricating oils. The Office relies on Kinker to cure Roos' silence with respect to the inclusion of particular organic esters as component (B) and for compositions that contain alkyl(meth)acrylate polymers in certain amounts (see pages 2 and 3 of the Office Action of January 11, 2008).

B. Claim 21 is rejected as obvious under the meaning 35 U.S.C. § 103(a) over the combination of Roos, Kinker and Sluham (U.S. Patent No. 3,518,917).

The Office further relies on Sluham as evidence that certain viscosity is desirable in anhydrous hydraulic fluids.

C. Claims 1, 18-20 and 29 are rejected as obvious under the meaning 35 U.S.C. § 103(a) over the combination of Mottus (U.S. Patent No. 3,311,597) with Kinker.

The Office relies on Mottus for disclosure of hydraulic fluids containing alkyl(meth)acrylate polymers in certain amounts. The Office relies on Kinker to cure Mottus's silence with respect to the inclusion of particular oxygen-containing compounds as component (B) and for the use of such composition as hydraulic fluids having certain properties (see page 6, paragraph No. 6 of the January 11, 2008 Office Action).

D. Claim 21 is rejected as obvious under the meaning 35 U.S.C. § 103(a) over the combination of Mottus, Kinker and Sluham.

The Office relies on Sluham for a teaching of anhydrous hydraulic fluids having high viscosity (see paragraph No. 7 on page 8 of the January 11, 2008 Office Action).

E. Claim 22 is rejected as obvious under the meaning 35 U.S.C. § 103(a) over Mottus, Kinker in combination with Liesen (U.S. 6,323,164).

The Office relies on Liesen as a teaching of hydraulic fluids that include polymerized methacrylates prepared in the presence of a base diluent lubricating oil (see paragraph No. 8 on page 9 of the January 11, 2008 Office Action).

VII ARGUMENT

A-E. Each of the rejections set forth by the Office improperly combine Kinker with Roos or Mottus, thus the Office failed to set forth a *prima facie* case of obviousness and the rejections should be withdrawn.

The Examiner combined Kinker with Roos to cure Roos's silence with respect to compositions containing certain percentages of alkyl(meth)acrylate polymers and organic esters such as neopentyl glycol dioleate (see the second full paragraph on page 3 of the Office Action of January 11, 2008). The Examiner likewise combined Mottus with Kinker to cure Mottus's deficiency with respect to teaching the inclusion of oxygen containing compounds such as neopentyl glycol dioleate in combination alkyl(meth)acrylate polymers (see page 6, second to the last full paragraph of the January 11, 2008 Office Action).

Appellants submit that the combination of Kinker with any of Roos or Mottus is improper in view of the fact that Kinker discloses lubricating oil compositions that contain no more than 2 wt.% of a polymer. In contrast, the alkyl(meth)acrylate polymer recited in the present claims must be present in an amount of at least 5% by weight.

Kinker unmistakably limits the prior art lubricating oil composition to containing no more than 2 wt.% of a polymer. This is evidenced by the explicit description throughout the Kinker patents. For example:

> A lubricating oil composition includes from 0.01 wt% to 2 wt% of a polymer that includes repeating units derived from a (C_8-C_{15}) alkyl(meth)acrylate monomer and 98 wt% to 99.99 wt% of a vegetable oil or a polyol ester.

See the Abstract of Kinker.

Kinker further discloses:

> In a first aspect of the present invention, a lubricating oil composition includes from 0.01 (wt.%) to 2 wt% of a polymer, said polymer including repeating units each derived from a (C_8-C_{15}) alkyl(meth)acrylate monomer, and from 98 wt.% to 99.99 wt.% of a vegetable oil or a polyol ester ...

See column 1, lines 28-31 of Kinker.

Kinker therefore discloses the inclusion of oxygen-containing compounds in lubricating oil compositions in an amount that is exclusive of the amount required by the presently claimed invention. The lubricating oil compositions of Kinker may contain no more than 2wt.% of an alkyl(meth)acrylate where as the presently claimed invention requires than at least 5wt.% of an alkyl(meth)acrylate is present.

The Office has provided no evidence that one of ordinary skill in the art would have any basis to believe that a liquid composition containing no more than 2 wt.% of an alkyl(meth)acrylate polymer is the same as or similar to a composition that contains at least 5 wt.% of an alkyl(meth)acrylate polymer. Further, the Office failed to provide any reason why one of ordinary skill in the art would believe that modifying Kinker to include greater than 2 wt.% of an alkyl(meth)acrylate polymer would be expected to successfully provide a lubricant oil composition.

The Office's combination of Kinker with either of Mottus and Roos is not proper because Kinker describes compositions that fall outside the compositions of the present claims. Modifying Kinker in the manner of Roos or Mottus would result in a modification that is contradictory to the express disclosure of the Kinker patent. The Office's combining of Kinker with Roos and/or Mottus is thus not supporting of a *prima facie* case of obviousness and the rejection should be withdrawn.

Appellants submit that the art relied on by the Office would dissuade one of ordinary skill in the art from making the modification suggested by Office to be obvious.

Appellants draw the Office's attention to the examples of Kinker which demonstrate that (1) the effect of varying the amount of polymer is not predictable and/or that (2) changing the amount of polymer present in the composition substantially impacts the properties of the composition. Examples 1A-10A described in columns 5 and 6 of Kinker are

compositions that contain 0.39 wt.% polymer solids (see column 5, line 55 of Kinker). Example 1B is the same composition as Example 1A but instead contains 0.79 wt.% polymer solids (see column 6, lines 18-19 of Kinker). A comparison of the properties of the Example 1A and 1B compositions is provided in Table 4 of column 6 of Kinker, reproduced below for convenience:

TABLE 4

	Canola Oil	Example 1A	Example 1B
Pour Point (°C)	-24	-33	-33
Kinematic Viscosity			
(cSt), 40°C	35.95	37.38	38.76
0°C	---	231.2	243.6
-10°C	---	446.2	469.8
-20°C	---	1026	1067
-30°C	---	4239	3938
Brookfield Viscosity			
(cP), -10°C	---	550	600
-20°C	---	1450	1500
-26°C	Solid	2400	3300
-30°C	Solid	3350	4350
-40°C	Solid	Solid	Solid

Table 4 above provides the viscosity properties of the compositions of Example 1A and 1B. It is evident from the data of Table 4 that the kinematic viscosities of the Example 1A compositions are greater than the kinematic viscosities of the Example 1B composition. In contrast, the Brookfield viscosity (e.g., the absolute viscosity) of the Example 1A compositions is lower than the Brookfield viscosity of the Example 1B compositions. The Kinker data above are contradictory and may lead one of ordinary skill in the art to believe that a predictable effect cannot be directly attributed to the amount of polymer present in the prior art compositions.

Thus, any assertion by the Office that the properties of a composition containing 5% of polymer solids are predictable or subject to optimization in view of the properties of a composition containing 2 wt.% of solids is not correct for at least the reasons: (i) based on the

disclosure of Kinker one of ordinary skill in the art would not be able to attribute a predictable effect to the amount of polymer and/or (ii) one of ordinary skill in the art would recognize that increasing the amount of the solid polymer changes one of kinematic viscosity and Brookfield viscosity such that the properties of the resulting compositions are not similar (e.g., the compositions of the resulting compositions have different viscosities).

Appellants submit data provided by Kinker is probative of the patentability of the presently claimed invention and thus the rejection should be withdrawn.

The arguments above are especially relevant to the subject matter of Claims 23 and 24 which recite properties such as kinematic viscosity and pour point, respectively. As discussed above, Kinker discloses examples tending to show that such properties are not easily predictable in compositions containing different amounts of polymer. Thus, those of skill in the art would have no reason to predict that the properties recited in Claims 23 and 24 would be obvious.

As discussed above in detail, Appellants respectfully request the Board overturn the rejections of record.

Respectfully submitted,

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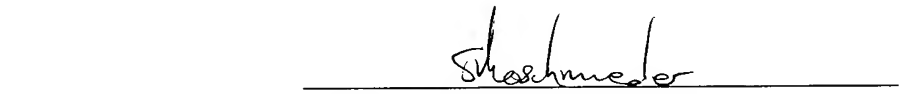
Norman F. Oblon



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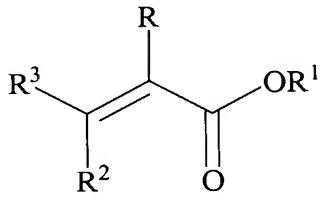
CLAIMS APPENDIX

Claim 1: A functional fluid comprising

A) 5 to 30% by weight based on the total weight of the functional fluid of one or more alkyl(meth)acrylate polymers obtainable by polymerizing a mixture of olefinically unsaturated monomers, which comprises

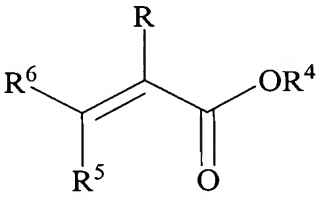
a) 15-70 wt% based on the total weight of the ethylenically unsaturated monomers of one or more ethylenically unsaturated ester compounds of formula (I)



(I),

where R is hydrogen or methyl, R^1 means a linear or branched alkyl residue with 1-6 carbon atoms, R^2 and R^3 independently represent hydrogen or a group of the formula -COOR', where R' means hydrogen or an alkyl group with 1-6 carbon atoms,

b) 30-85 wt% based on the total weight of the ethylenically unsaturated monomers of one or more ethylenically unsaturated ester compounds of formula (II)



(II),

where R is hydrogen or methyl, R^4 means a linear or branched alkyl residue with 7-40 carbon atoms, R^5 and R^6 independently are hydrogen or a group of the formula -COOR", where R" means hydrogen or an alkyl group with 7-40 carbon atoms, and

c) 0-50 wt% based on the total weight of the ethylenically unsaturated monomers of one or more comonomers, and

B) 70 to 95 % by weight based on the total weight of the functional fluid of at least one oxygen containing compound selected from the group consisting of neopentyl glycol dioleate, neopentyl glycol tallate, diethylene glycol dioleate, diethylene glycol tallate, propylene glycol tallate, trimethylol propane dioleate, pentaerythritol oleate, pentaerythritol dioleate and propylene glycol dioleate,

wherein the functional fluid can achieve a Factory Mutual 6390 Group 1 or Group 2 rating.

Claim 2: The functional fluid according to claim 1, wherein the oxygen containing compound has a fire point according to ASTM D 92 of at least 250 °C.

Claims 3-11 (Canceled).

Claim 12: The functional fluid according to claim 1, wherein the alkyl(meth)acrylate polymers have a molecular weight in the range of 300 g/mol to 50 000 g/mol.

Claims 13-15 (Canceled).

Claim 16: The functional fluid according to claim 1, wherein the alkyl(meth)acrylate polymers are obtainable by polymerizing a mixture comprising vinyl monomers containing aromatic groups.

Claim 17: The functional fluid according to claim 1, wherein the weight ratio of the alkyl(meth)acrylate polymers to the oxygen containing compound is in the range of 2:1 to 1:10.

Claim 18: A hydraulic oil comprising the functional fluid according to claim 1.

Claim 19: The hydraulic oil according to claim 18, wherein the hydraulic oil comprises at least 20% by weight of the functional fluid according to claim 1.

Claim 20: A method for improving the fire resistance of hydraulic fluids, transformer oils and quench oils, comprising:

mixing the functional fluid of Claim 1 with the hydraulic fluid, transformer oil or quench oil.

Claim 21: The method according to claim 20, comprising:

mixing the functional fluid with an anhydrous hydraulic fluid.

Claim 22: A method for the manufacture of the functional fluid according to claim 1, wherein a mixture of olefinically unsaturated monomers is polymerized in a fluid of an oxygen containing compound according to component B).

Claim 23: The functional fluid according to Claim 1, having a kinematic viscosity at 40°C according to ASTM D 445 of from 28 mm^2/s to 110 mm^2/s.

Claim 24: The functional fluid according to Claim 1, having a pour point according to ASTM D 97 of -40°C or less.

Claim 25: The functional fluid according to Claim 1, having a fire point according to ASTM D 92 of at least 300°C.

Claim 26 (Canceled).

Claim 27: The functional fluid according to Claim 1, wherein the alkyl(meth)acrylate polymer comprises from 34 to 70 wt.% of methyl(meth)acrylate.

Claim 28: The functional fluid according to Claim 27, wherein the alkyl(meth)acrylate polymer consists of monomers a), b), and c).

Claim 29: The functional fluid according to Claim 1, wherein the alkyl(meth)acrylate polymer comprises copolymerized units of octadecenoic acid ester, lauryl methacrylate, and methyl methacrylate.

Claims 30-32 (Canceled).

Claim 33: The functional fluid according to Claim 1, wherein B) is present in an amount of 79.7 to 99% by weight based on the total weight of A) and B).

Claim 34 (Canceled).

Claim 35: The functional fluid according to Claim 1, consisting of A) and B).

Claim 36: The functional fluid according to Claim 1, wherein the functional fluid has a Factory Mutual 6390 Group 1 rating.

Claim 37: The functional fluid according to Claim 1, wherein the functional fluid consists of A) and B), the alkyl(meth)acrylate polymer comprises from 34 to 70 wt.% of methyl(meth)acrylate, and B) is present in an amount of 80 to 99% by weight based on the total weight of A) and B), and

wherein the functional fluid has a Factory Mutual 6390 Group 1 rating.

Claim 38 (Canceled).

Claim 39: The functional fluid according to Claim 1, wherein the alkyl(meth)acrylate polymer comprises polymerized units of methyl(meth)acrylate.

Claims 40-42 (Canceled).

Claim 43: The functional fluid according to claim 1, wherein R is methyl, R^1 is a methyl residue, and R^2 and R^3 represent hydrogen atoms in the ethylenically unsaturated ester compound of formula (I), and R is methyl, R^5 and R^6 are hydrogen atoms in the ethylenically unsaturated ester compound of formula (II).

Claim 44: The functional fluid according to claim 1, wherein the oxygen containing compound is at least one selected from the group consisting of neopentyl glycol dioleate,

neopentyl glycol tallate, diethylene glycol dioleate, diethylene glycol tallate, propylene glycol tallate and propylene glycol dioleate.

Claim 45: The functional fluid according to claim 1, wherein the oxygen containing compound is neopentyl glycol dioleate.

Claim 46-58 (Canceled).

EVIDENCE OF APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.